BOOTHROYD STUART MERIDIAN

Bob Stuart answers Questions about the Meridian 800

Design philosophy…?

1 What is the Meridian 800?

The Meridian 800 is the most advanced, highest performance CD and DVD-Video player. It features an extremely high-performance architecture that guarantees you access to state-of-the-art sound and picture performance for many years to come.

Meridian is the world leader in CD and DVD playback quality and the 800 sets them even further ahead of this field.

The 800 is built like a computer. So *all* the electronics are on plug-in cards and the drives are replaceable. This is done so that the 800 can evolve with your requirements and as new, formats are introduced. Here the resemblance to any other computer ends – this one is skilfully made to provide the highest possible sound and picture quality.

2 What is the standard 800 configuration?

The standard 800 plays back CD, CD-R, Video CD, CDI and DVD-Video using a carefully selected and optimised DVD-ROM drive mounted in one of its two drive bays.

800 can also be your system preamp or controller. The 800 provides 6 additional digital inputs and will be fitted to order with either digital or analogue outputs (or both).

You can specify exactly what you want from card options and your 800 can be configured as a transport, player or both.

3 What can I add to my 800 now?

You can add more inputs to the 800 – e.g. 6 analogue inputs, additional digital inputs, a LaserDisc RF demodulator and/or a tape card that provides an analogue output for tape or 2-zone applications. The tape card also provides a headphone socket with its own (front panel) volume control.

4 Why is 800 made this way?

The 800, like its stable-mate 861 is built like this so that we can evolve its performance and facilities as technology advances, as your requirements evolve and as new formats enter the marketplace. For more on this, see question 62.

5 Why is a ROM drive used?

The 800 uses a ROM drive so that it can be changed in the future to keep pace with new requirements. For more on this, see question 7.

Sound issues...?

6 Is 800 a good CD Player?

It is totally stunning! This is very important: CD will be the major source of music enjoyment for many years because the catalogue is so rich and the sound we can get is so good.

Meridian has made the best CD players for 15 years, with award-winning models like the 208, 602 and 508. But, the 800 is *by far* the best sounding that has ever been made! The ROM reading system and error correction method provides a very accurate data stream. The 800 then uses three levels of memory-based de-jittering to smooth out the data to previously

unheard levels. Finally, precision DSP upsampling is used to feed an 88.2kHz 24-bit signal to the DACs or (optionally) the digital output(s).

Meridian's 800 team has devoted three years to perfecting this aspect alone ….

7 How can a ROM drive be so good?

ROM drives recover the data from computer discs perfectly. Loading a computer program rarely fails due to the ROM drive. Therefore, extracting the data from a CD or DVD can be done without error. Normally, however, a computer pays no attention to how smoothly the data flows from the disc. That's where our special technology comes in. From leaving the drive, the information is in the hands of the most sophisticated audio circuitry ever used in a Disc player. The 800 uses three memory buffers *and* three layers of error correction to get the lowest jitter and highest integrity data possible.

Unlike other players that have to try to minimise drive vibration to get low jitter, the 800's memory architecture abolishes this problem forever. In fact, the 800 will often read the data from the disc more than once just to be sure it has it right. The result of this sophisticated effort shows up in ultra-low jitter with sound and picture quality second to none.

8 How do I get 96kHz out of my 800?

This is always available on the analogue outputs (if fitted) and (according to setup) can be on the digital outputs – subject to copy protection regulations.

9 What is upsampling?

Upsampling uses a complex digital filter to double the rate of samples from the source so that the following system can more accurately reproduce the sound. 800 combines Resolution Enhancement with upsampling. For example, CD (which starts as 44.1kHz 16-bit audio) is upsampled using Meridian proprietary DSP to 88.2kHz 24-bit and DVDs with 48kHz audio are upsampled to 96kHz 24-bit.

Meridian has been famous for its Resolution Enhancement technology in products like 518.

The upsampling and Resolution Enhancement can be applied to any signal fed into 800.

10 But my DAC doesn't support 96kHz. What do I do?

There is more benefit from double speed digital audio the further down the chain it goes. If you cannot receive 88.2kHz or 96kHz don't worry. For now, use the incredibly transparent downsampling DSP in the 800 to feed one or both of the digital outputs. If you upgrade your DAC or DSP speaker then you can turn double speed on again.

11 Will 800 have multichannel output?

In the first (1.0) version the 800 is a 2-channel device that sends AC-3 multichannel streams to a surround decoder like the Meridian 861. This is because it is principally a CD and DVD-Video player.

The audio architecture of 800 is like our 861, so we are considering multichannel in two ways as future upgrade options.

First, we could add DSP and multichannel outputs to enable surround processing in 800 – for example offering 3-speaker stereo using Trifield.

Second, multichannel analogue output may become a feature with any new formats that are supported.

12 What is MHR?

MHR (Meridian High Resolution) is a proprietary method for getting the highest possible sound quality in playback systems that use Meridian components like 800, 861 and DSP Loudspeakers.

MHR also uses proprietary encryption and anti-copy techniques to ensure secure transfer of audio streams between elements of a Meridian-only system for the purpose of playback only. It provides a secure copyright protection environment and has the very important benefit of lowering jitter and improving sound quality on all material.

Video issues…?

13 What is video copy protection?

Meridian 800 uses Macrovision analogue video copy protection to prevent DVDs being copied on VCRs. This is a mandatory feature of all DVD players. The copy protection will not interfere with picture quality so long as the display device is reasonably modern.

14 What is extended black?

Extended black is a video out option on 800.

For historical reasons NTSC uses a reduced video dynamic range (contrast) – spanning from 7.5% to 100%. PAL uses the whole 0 – 100% range.

The 800 can play NTSC back using the full 0 to 100% range. This is preferable if you have a display device set up for PAL and want to switch between PAL and NTSC without adjusting the black level (brightness). It is also the way to get the very best picture from an advanced display device, because the 800 can squeeze in that extra resolution.

15 Does 800 have a progressive output?

No. Current copy protection rules do not permit progressive output. If this changes, 800 should be upgradable.

16 What about PAL and NTSC?

800 will play back in PAL or NTSC. Normally you switch the player between these two modes (switch under the front flap with **Function**+**Setup**).

17 Does the 800 convert PAL to NTSC and vice-versa?

Yes it does. However there are some limitations in the handling of menu overlays. It is better if the display device can handle both if you need this feature and it is very easy to switch 800 between PAL and NTSC modes. If your display doesn't do PAL, the translation feature allows you to enjoy the movie.

18 Does 800 have video processing?

Yes! Digital video processing is extensively used in playback. The architecture of 800 includes a digital video backplane that leaves us the option to add more video processing cards in the future.

19 What Video inputs are available?

Currently none, but video inputs are a future possibility.

20 What are the trick modes? (slow, fast, zoom etc.)

On CD you can listen while moving fast-forward or backward at two speeds (2x and 30x).

On DVD you can watch while moving fast-forward or backward at two speeds (2x and 6x).

DVD can be played back stepping through still frames, or played slowly at 1/2, 1/4 and 1/16 speeds. 800 also supports the 'angle' feature on DVD.

What does the 800 play…?

21 Will the 800 play CDRs?

Yes. The drive has two lasers, allowing optimal reading of CD-based, CD-R and DVD media.

22 Does it play VCD?

Yes – very well! This feature provides access to thousands of titles.

23 Does it play DVD-Audio?

Although the technical standard now exists for the DVD-Audio disc, important issues like copy protection are still being discussed, so there are no DVD-Audio players on the market yet. As one of the writers of the standard, Meridian is hard at work on this. (See also question 65).

24 Does it play SAD or DAD?

Well there are a lot of TLAs[1] around these days – but why would *anyone* call a format SAD! SAD (Super Audio Disc) and DAD (Digital Audio Disc) are marketing misnomers for DVD-Video discs that have 96kHz 2-channel audio streams.

The 800 plays them very well!

25 Does the 800 play DTS DVDs?

800 will play the mandatory streams on all DVD-Video discs (Dolby Digital, MPEG and PCM). A very small number of DVDs have an optional DTS stream; currently 800 does not make this stream available – nor does it contain a DTS decoder.

We expect to provide a hardware upgrade that enables 800 to output the DTS stream in the future. In the meantime you can play these discs and enjoy the Dolby Digital audio track on both the analogue and digital outputs.

26 Does the 800 play DTS CDs?

CDs encoded with DTS are standard red-book discs. The 800 detects these discs and provides the DTS stream on the digital output. However, 800 does not decode DTS, so if you play one of these discs the analogue outputs will be silent. To hear these discs you will need an outboard decoder like a Meridian 861, 561 or 565.

27 Does the 800 play MLP CDs?

There aren't many of these, however the 800 will detect these discs and provide the MLP stream on the digital output. 800 will not decode MLP, so if you play one of these discs the analogue outputs will be silent. To hear these discs you will need an outboard decoder like a Meridian 861, 561 or 565.

[1] TLA – Three-Letter Acronym!

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28 Can 800 play Laserdisc?

Obviously you can't fit a Laserdisc into the 800 drive – it is limited to 5" media! However, by fitting an RF laser demodulator card, you can connect a Laserdisc player to the 800 and get the most fantastic performance. Meridian's demodulator is the very best and you should hear what the upsampling and de-jittering do to the sound of those discs you thought you knew!

29 Can 800 play LP?

Obviously you can't fit an LP into the drive either! However, by fitting a phono input card, you can connect a turntable to the 800 and get fantastic performance.

30 Will it decode HDCD?

No, but HDCDs are CD-compatible and will play back just fine.

31 Does it put out MPEG digital streams?

Not in this version. The 800 currently decodes all MPEG audio streams and puts them out as PCM. A future upgrade may enable MPEG stream output.

32 Will it play SACD?

No. As new formats like SACD, MP3 or DiVx appear Meridian will assess their viability or their importance to our customers. The flexible architecture of the 800 allows us to contemplate upgrading to any future format that can use a standard drive bay.

33 And what about DiVx?

No. The flexible architecture of the 800 allows us to contemplate upgrading to formats like DiVx. Will we? It really depends on whether this is ever important to enough of our customers.

34 Does it play CDI?

Yes, it plays audio or VCD tracks on CDI discs.

35 What about MP3?

Good question! Obviously 800 has two drive slots and a bay that could take a fixed or removable disc capable of storing MP3 files and we could play them back. Exciting isn't it? Anyway, we will wait until the music industry is happier about all this ….!

36 What about playability?

Playability is a measure of the player's ability to cope with discs that have errors or defects.

DVD is incredibly robust regarding errors – DVD has 1000 times more protection than CD. The drive used in the 800 is superb at playing DVD. Of course, you *can* put a huge fingerprint on a DVD that causes problems – just wipe it clean!

CD provides less protection against disc scratches or manufacturing defects. The drive used in 800 has very powerful error correction, and our system operation which allows multiple re-reads of the data improves this even more. Our experience with 800 is that it is less troubled by CD defects than any other player we have made. However, there will always be serious defects that may confuse it – if you find one we would like to know.

37 Do I need a Dolby Digital (AC3) decoder?

No. The 800 has the ability to decode Dolby Digital to two channels and to encode it (if necessary) as Dolby Surround (if you have a ProLogic decoder).

If you require a full surround system you will need a separate decoder for multichannel. We recommend the Meridian 861 as the perfect partner to the 800.

38 Do I need an MPEG decoder?

No. The 800 has the ability to decode MPEG streams internally.

Connections…?

39 What audio outputs are available?

The Meridian 800 can be fitted with a digital output card, an analogue output card – or both.

The digital output provides two separate output signals and each signal is available on two connectors (four connectors in all) – as unbalanced (phono) and balanced (XLR).

Why two outputs? The 800 has sophisticated up- and down-sampling DSP so it is possible to feed different playback systems with normal rate (44.1/48kHz) or double-speed (88.2/96kHz) digital audio. In addition, the Meridian 800 supports MHR (see question 12) and this can be used with either socket.

The analogue output can be configured to be fixed level (like a player) or variable (like a preamp) to feed power amps or active speakers directly. The output conversion always uses the highest possible sampling rate and the card features Meridian's fantastic sounding 96kHz 24-bit conversion.

In addition, each 800 comes standard with a digital tape (or 2nd room) output and bypass output that allows you to listen to the incoming signal (subject to some restrictions on internal DVD playback).

40 What video outputs are available?

You can select either S-Video or Component (YPrPb). Composite is always available.

41 Does 800 have 5-wire RGB output?

No. Five-wire RGBHV is the format used by upscaled progressive video and 800 does not output progressive yet (see question 15). This may come with a later video-processing card.

42 Does 800 have a SCART output?

Not at the moment. We may release a version of the video output card if enough customers want it.

43 Has 800 got a headphone socket?

There is a headphone socket on the optional Tape card and you can adjust the volume from the front panel.

44 Can I record from my 800?

You can record the audio output. There is no provision to allow copying of the video (for copyright reasons).

45 What do I need to make recordings?

The standard 800 provides digital tape out. For analogue recordings you need to add a Tape card. There is no provision to allow copying of the video (for copyright reasons).

46 Can I use 800 with a CD Recorder?

Not so easily. The 800 does not provide the timecode flags in its digital outputs that many CD Recorders need for track management. These time-codes are omitted principally because they reduce playback sound quality and as part of 800's advanced copy-protection strategy.

800 as a Preamp…?

47 Can I use the 800 as a preamp?

Yes, the standard 800 provides 5 additional digital inputs and a digital tape output. When used as a preamp you get Volume, Balance, Mute and Phase functions.

Optionally you can fit an analogue input card or an RF demodulator (for Laserdisc).

You can use the 800 as a system preamp for Meridian DSP Loudspeakers.

Also, you can set analogue outputs to 'variable' – enabling the 800 to feed power amps or active speakers directly. In this mode, digital AC-3 streams can still be accessed on the Tape output.

The 800 also supports the T00 Tape card – which adds analogue tape output and a headphone socket.

48 800 and 2-room

800's digital tape output can be used to feed any connected source to a second room. In the case of DVD, this output can be configured to feed raw Dolby Digital or already-decoded PCM suitable for stereo or ProLogic playback in the second zone.

A pair of Meridian DSP Loudspeakers makes an ideal setup for a second zone.

If you fit a Tape card then you can feed analogue to the second room.

The 800, like all Meridian controllers, supports multiroom displays and integrates into the Meridian Two-Room Plus system.

800 with 861…?

49 How do I connect an 800 to my 861?

Using 1, 2 or 3 standard SPDIF connections and (optionally) S-Video.

If the 861 has an IE16 card you can get even higher quality by enabling MHR between them (see question 12).

Why multiple connections? You may want to use both the double-speed (88.2/96kHz) and standard outputs from 800. For more details, see our application note 'Using Meridian 800 with an 861'.

50 Can I move 861 cards into my 800 to free some space?

Yes, your trained Meridian dealer can move some audio cards from 861 to 800 (only inputs and Tape for now).

800 with DSP speakers...?

51 Can I use 800 direct into Meridian DSP Loudspeakers?

Yes – and what a system! For the ultimate purist 2-channel system, connect the 800 directly to a pair of DSP Loudspeakers. Any other sources can be connected to the 800.

The new or upgraded versions of DSP speakers support 96kHz and MHR. Enjoy CD and DVD music as never before!

You may want to connect 800 directly to the second input on the DSP Master Loudspeaker – even if you have an 861, 561 or 565.

800 with 861 and DSP speakers

52 Can I use 800 with 861 and DSP speakers?

Yes, however in this system the 861 *must* be the system controller. If you have an installation currently controlled by the DSP speakers then this must be reconfigured in the software setup. Note: if the 861 is hidden from view, then you will need a 512 infra-red pickup.

Configuration…?

53 Do I need to use a computer to set it up?

This depends on what you want to do. Video settings are made using on-screen display. The 800 also comes pre-programmed for five common audio configurations – we call these 'Types'. You pick a Type by powering up while pressing the 'Off' key – it's just the same as all Meridian products.

For more advanced setup of the many audio options, then computer setup provides a quick and easy way to complete the system setup. The setup program runs in Windows 95 or NT.

54 How is the software changed?

800's software can be updated using a computer with an RS232 connection. Updates will be posted from time-to-time on the Meridian web site at:

http://www.meridian-audio.com/lib_soft2.htm

55 Can its Region Code be changed?

Every DVD Player is required to have the correct Region Code. The Region Code for each 800 is held in its firmware. If your 800 has the wrong Region Code please contact your dealer.

56 Can I have a Region-free 800?

Not from us. Every DVD Player is required to have a Region Code – don't even ask!

57 Can I plug it into my computer and use it as a ROM drive?

No.

58 Can I control it with AMX, Crestron or Phast?

Yes. The 800 has a full set of commands that allow it to be fully integrated into any control system that uses an RS232 bridge.

59 Do I need new software in my Meridian DSP Loudspeakers?

If you have new or upgraded 96/24 DSP speakers and you want the Master speaker to be the system Controller, then make sure it has software 4.1 or higher loaded in. This software is on the disks that come with the 800.

If you haven't upgraded your speakers then either use an 861, 561, 565 (see question 60) or 800 as the Controller – or set the MSR3 Remote control to '586 mode' as described in the MSR3 handbook[2].

60 Do I need new software in my Meridian 561, 565 or 861?

For full compatibility with 800 you need to be running: Version 1.5 or higher in 561, Version 6.0 or higher in 565 and Version 2.5 or higher in 861. Suitable software for 561 and 861 are on the disks supplied with the 800. 565 needs an EPROM and you should be sure to get this done by your dealer. If for any reason you haven't updated yet, you can start off using the MSR3 in '586 mode' (see question 59).

61 My controller is a Meridian 501, 502 – how do these work with 800?

We suggest that you keep the 501 or 502 as Controller and use the MSR3 in '586 mode' (see question 59).

About upgrades…?

62 What is the upgrade path?

Like its stable-mate 861, 800 is not like any other kind of Hi-Fi equipment. Both have been designed using high-performance motherboards in such a way that *all* the circuitry is on plug-in cards. This means everything can be upgraded, changed, evolved and so on. 800 extends this concept to using standard-sized drives.

In both 800 and 861 this has been done expressly so that they can be upgraded and evolved as new sources or requirements arise.

For example, in the two years since its introduction, the 861 has been upgraded several times – to increase its performance to 96kHz and 24-bit, adding new source cards, adding a variety of video switching options, adding multichannel input and DSP Room Correction. It doesn't stop there: 861 will gain more and more sound-processing DSP, more outputs and inputs as requirements grow.

800 inherits this mindset. We are currently considering adding video processing (like upscaling or line doubling), video inputs, multichannel output – and of course hoping to add any significant new format like DVD-Audio.

The future of AV is very exciting and we have designed 800 and 861 to give you and us the best shot at unequalled performance now and open-ended opportunities down the road.

One word of caution: Meridian plans to evolve these components in any way that improves the sound, picture or versatility that makes sense. It does not mean that we *will* do *everything*, or that we will do it *first* – so you must be happy with what you buy today. However, we certainly will try and whatever we do will be for good reason and excellent!

Ask your dealer for a copy of our white paper on upgrades; 'Bulletin on new technologies, product roadmaps and upgrades'

[2] This allows the handset to 'talk' directly to 800 even if it is 'Not Controller'.

63 Can a second drive be fitted in the future for recording or as a changer?

We have many plans for the second drive bay so watch this space….

64 Is there a tuner card?

No plans right now.

65 Will the 800 be upgradable to DVD-Audio?

It's very likely. This is a very exciting time for Meridian and no other company is better placed to make the most of DVD-Audio when eventually this settles into a full specification. The 800s architecture is perfect for a multichannel audio player. We will update this answer as progress is made.

66 But company x claims they can upgrade their player to anything?

To anything? It's very unlikely! But if you really believe them, buy it!

While you're at it, if they are *so* certain of the future as to warranty it, let them manage your stock portfolio!

These are exciting times for sound and picture formats. Exciting times are complex – and as one of the companies working on future standards – Meridian really does understand *how* complex formats can be. Even more so when the aim is to provide the best sound and picture.

We won't make any outrageous promises. However we hope to convince you that we have designed for extreme flexibility, with ingenuity and we have performed to date.

Watch this space….

See an updated version of this FAQ at our website http://www.meridian-audio.com/lib_faq.htm

See the referenced documents in our web-library: http://www.meridian-audio.com/m_lib.htm.

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